

CLAIMS

We claim:

1. A high efficacy stick antiperspirant/deodorant free of added stearyl alcohol and comprising in weight percent based on the total weight of the composition:

(a) 30-70% volatile cyclomethicone;

(b) 10-25% of an antiperspirant active;

(c) 1-15% of an emollient;

(d) 1-14% of polyethylene comprising one or more members selected from the group consisting of homopolymers and copolymers of polyethylene wherein the polyethylene (i) is at least 90% linear; (ii) has a molecular weight in the range of 300-3000; (iii) has a melting point in the range of 50-129 degrees C; and (iv) has a polymer backbone of $\text{CH}_3\text{CH}_2-(\text{CH}_2-\text{CH}_2)_n-\text{CH}_2-\text{CH}_3$, where n is an average number and is selected to be in the range of 10-106; and

(e) 0.3-7% of a wax as a co-gellant with the polyethylene wherein the wax has a melting point in the range of 40-97 degrees C;

provided that the ratio of wax:polyethylene is in the range of 1:1-1:10.

2. A stick as claimed in Claim 1 comprising 40-50% of a volatile silicone.

3. A stick as claimed in Claim 1 wherein the emollient comprises a mixture of two or more emollients.

4. A stick as claimed in Claim 1 comprising 3-12 % emollient.

5. A stick as claimed in Claim 1 wherein the emollient comprises a non-volatile silicone.

6. A stick as claimed in Claim 5 wherein the emollient comprises a 10-350 centistoke dimethicone.

7. A stick as claimed in Claim 1 wherein the emollient is a member of the group consisting of

(a) fats and oils represented by Formula III:



Formula III

wherein each of R^1 , R^2 , and R^3 may be the same or different and have a carbon chain length (saturated or unsaturated) of 7 to 30;

(b) hydrocarbons selected from the group consisting of paraffin, petrolatum, hydrogenated polyisobutene, and mineral oil;

(c) esters of general structure would be $R^4\text{CO-OR}^5$ wherein the chain length for R^4 and R^5 hydrocarbon groups is in the range of 7-30 and can be saturated or unsaturated, straight chained or branched;

(d) saturated and unsaturated fatty acids which have general structure $R^6\text{COOH}$ with the R^6 group being a straight chain hydrocarbon with a carbon chain length between 7-10;

(e) saturated and unsaturated fatty alcohols which have a general structure $R^7\text{COH}$ where R^7 is a straight chain hydrocarbon with a carbon length of 7 to 10;

(f) lanolin and its derivatives selected from the group consisting of lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin and acetylated lanolin alcohols;

(g) alkoxylated alcohols wherein the alcohol portion is selected from aliphatic alcohols having 2-18 carbons, and the alkylene oxide portion is selected from the group consisting of ethylene oxide, and propylene oxide having a number of alkylene oxide units from 2-53;

(h) silicones as the linear organo-substituted polysiloxanes which are polymers of silicon/oxygen with general structure:

(1) $(R^{10})_3\text{SiO}(\text{Si}(R^{11})_2\text{O})_x\text{Si}(R^{12})_3$, where R^{10} , R^{11} and R^{12} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; or

(2) $\text{HO}(R^{14})_2\text{SiO}(\text{Si}(R^{15})_2\text{O})_x\text{Si}(R^{16})_2\text{OH}$, where R^{14} , R^{15} and R^{16} can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; and

(i) mixtures and blends of two or more of the foregoing.

8. A stick as claimed in Claim 1 comprising 3-10% polyethylene.

9. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 50-70 degrees C.

5 10. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 60-70 degrees C.

11. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 70-129 C.

10 11. A stick as claimed in Claim 1 wherein the wax has a melting point in the range of 40-80 degrees C.

13. A stick as claimed in Claim 1 wherein the wax is a microcrystalline wax having a melting point in the range of 60-97 degrees C.

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14. A stick as claimed in Claim 1 additionally comprising an effective amount of an antimicrobial agent.

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